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FRUIT AND NUT DISEASES

VIRUS DISEASES IN AN INTENSIVE RASPBERRY SECTION IN NEW YORK

W. Howard Rankin and L. M. Cooley

In the general vicinity of the villages of Brant and North Collins, Erie County, New York, raspberries have been a principal crop for several decades. Several thousand acres of red, black, and purple raspberries are at present grown in this region. Ten years ago when the raspberry virus diseases were first studied here, the growing of red varieties, except for one large planting of Ontario, had been abandoned. By inference and growers' opinions, mosaic had been the cause of the failure of red varieties. Furthermore, due to the high yields obtained from the purple hybrid Columbian and its acceptance by the canners as a "red" variety little interest was found for attempting to bring the red varieties back into cultivation. In more recent years, several red varieties have been introduced but only a fair degree of success has been experienced in holding red and yellow mosaic sufficiently in check to make them profitable. In the meantime the previously satisfactory plantings of black raspberries became unprofitable due to the inroads of red mosaic. No attempts had been made to control the virus diseases in the black varieties and the stock is now 20 to 100 per cent affected. Naturally, the more susceptible varieties are no longer grown and most of the black raspberry fields represent local selections of partially resistant sorts, inferior to standard varieties in yield and quality of fruit. Of late years the purple Columbian has constituted the majority of the total acreage. This variety is peculiar in that the stock is universally affected with red mosaic.

It is sufficiently resistant, however, so that its past reputation as a variety is not materially affected. Thus it is seen that in this concentrated large acreage, two raspberry virus diseases, red and yellow mosaic, particularly the former, are exhibiting their full effect on an important industry. The two streak diseases and the two leaf curls are present but not prevalent enough to cause much loss.

Experiments to test practical measures of control in this district were begun last year. Cooperative plantings of mosaic-free black raspberries, Cumberland and Plum Farmer, were made in a variety of locations. The rate of virus invasion of these plantings and the various environmental factors influencing disease spread are being studied. Also, for the more favorable locations, roguing is being carried on to test the efficiency of such measures under the prevailing conditions. The present indications are that isolation sufficient for production of foundation-grade planting stock cannot be obtained in this district. It may even be found that roguing under most conditions here is impractical. Mediocre mosaic control seems to be the best obtainable in the immediate intensive district, with its abundant sources of infection. However, excellent results are being obtained in a few outlying plantings. A rapid general change from the present diseased plantings to disease-free new plantings is impractical because of the large acreage of Columbian plantings which, though completely infected, have, until recent years, remained fairly profitable. A sentiment favoring disease-free black and red varieties and gradual elimination of the purple Columbian exists among the growers now, and the next few years will probably see a gradual shift being made. Most of the cooperating growers have been impressed with the production of the healthy stock, even though they cannot maintain it in such condition.

This statement on the situation and experiments on control takes no account of the possibility of turning to resistant or klendusic varieties. At present there is an excellent chance that this method may solve the problem in the case of red raspberries. A new variety, Newburgh, seems to be sufficiently klendusic even for this district of high rates of mosaic spread. For black raspberries, the most klendusic variety known to date, the Naples, is not klendusic enough for present conditions in this district. The standard black variety, Cumberland, lacks klendusity but is as resistant to red mosaic as any now available. Its resistance is not sufficient to recommend it because of the low quality of the fruit borne on diseased plants. All new purple varieties developed and tested to date seem unusually high in resistance but exceptionally low in klendusity, like the Columbian.

APPLE RUST SURVEY

Paul R. Miller

A survey was made by the writer and L. R. Fate in the apple regions of West Virginia, Virginia, North Carolina, Georgia, and one County in Pennsylvania, July 11 to 30, 1932, for the purpose of determining the extent and severity of apple rusts as well as to obtain further information on varietal susceptibility to the two species, apple rust (Gymnosporangium juniperi-virginianae Schw.) and quince rust (G. germinale (Schw.) Kern). The abundance of red cedars was also noted.

The information obtained is presented in the two following tables (Tables 28 and 29). The map (Fig. 7) shows the approximate area surveyed.

NOTE: Percentages are given in the tables only where actual counts were made. Otherwise the amounts of infection are represented by the terms: trace, used to denote less than 0.2 per cent; present, from 0.2 to 5 per cent; and abundant, more than 10 per cent.

Table 28. Gymnosporangium juniperi-virginianae on apples.

VARIETY	ESTIMATED ACREAGE	AMOUNT ON FRUIT	AMOUNT ON LEAVES	LOCALITY
Rome	5	*Present	Present	Hagerstown, Md.
Rome	25	*Trace	Trace	23 miles west of Hagerstown, Md.
Yellow Transparent	35	Trace	None	Hancock, Md.
York	40	None	Trace	Hancock, Md.
Rome	5	None	None	Berkeley Springs, W. Va.
Maiden Blush	10	None	Trace	21 miles northwest
Rome		None	Trace	of Martinsburg, W. Va.
Grimes	10	None	None	Hedgesville, W. Va.
Winesap	10	None	None	Hedgesville, W. Va.
Wealthy	75	None	Trace	Martinsburg, W. Va.
York	50	Trace	Trace	Martinsburg, W. Va.
York	100	Present	None	Charlestown, W. Va.
Rome		Present	Present	
Ben Davis		Present	Present	
Yellow Transparent	40	Present	None	Pikesville, W. Va.
Rome		Present	Present	
Delicious	50	None	None	Winchester, Va.
Transparent				
Winesap				
Rome	28	7%	*Abundant	Winchester, Va.

Fig. 7. Apple Rust Survey - July 11 to July 30, 1932.

Table 28 (Cont.)

VARIETY	ESTIMATED ACREAGE	AMOUNT ON FRUIT	AMOUNT ON LEAVES	LOCALITY
Rome Banana Transparent	400	None None Present	Present Trace None	Romney, W. Va.
Rome York Grimes	125	Abundant Trace None	Abundant Abundant Trace	Woodstock, Va.
Rome	50	None	Trace	Mt. Jackson, Va.
Rome York	50	Present Present	Present Present	Staunton, Va.
Grimes	15	Trace	Trace	Alton, Va.
Wealthy Winesap	5	Present Present	100% Trace**	Keswick, Va.
York	100	None	Trace	Cloverdale, Va.
Rome York	300	None None	Present Present	Starkey, Va.
Rome	60	Present	Present	Wytheville, Va.
Wealthy	100	Trace	Trace	Waynesville, N. C.
Terry	100	None	Present	Cornelia, Ga.
Terry	250	None	Trace	Hollywood, Ga.

** A few leaves were infected. Apparently the fungus had gained ingress through insect injuries or Black Rot lesions.

Table 29. *Gymnosporangium germinale* on apple fruit.

VARIETY	ESTIMATED ACREAGE	AMOUNT ON FRUIT	LOCALITY	REMARKS
Winesap	10	Present	Clear Springs, Md.	This was the northern limit for quince rust
Delicious	5	Present	Hagerstown, Md.	
Yellow Transparent	18,000 trees	1%	Hancock, Md.	*G. germinale* found on Juniper 1/3 mi. from orchard.
Winesap	100	Present	Berkeley Springs, W. Va.	
Winesap	10	Present	Martinsburg, W. Va.	

Table 29 (Cont.)

VARIETY	ESTIMATED ACREAGE	AMOUNT ON FRUIT	LOCALITY	REMARKS
Winesap	10	None	Hedgesville, W. Va.	No cedars in 3 mi. of orchard.
Delicious	40	None	Charlestown, W. Va.	No cedars in 3 mi. of orchard.
Stayman	25	Present	Charlestown, W. Va.	Cedars present.
Black Twig	10	Present	Keanesville, W. Va.	
Delicious	300	Present	Pikesville, W. Va.	
Yellow Transparent		Present		
Yellow Transparent	40	Present	Pikesville, W. Va.	First finding of G. germinale on Rome during this survey.
Rome		Present		
Yellow Transparent	50	None	3 miles north Winchester, Va.	No cedars in proximity of orchards.
Delicious		None		
Winesap		None		
Rome	28	9.5%	Winchester, Va.	Average by making actual fruit counts on 5 trees chosen at random
Rome		10.		East side of tree.
Rome		5.2		West side of tree
Stayman		0.5		Cedar trees were
Black Twig		1.5		found on East side
Winesap		1.		of orchard.
Yellow Transparent	400	0.5	Romney, W. Va.	No rust found on McIntosh, Duchess, Banana or Strawberry varieties.
Winesap		Trace		
Delicious		2.		
Delicious	125	Trace	Woodstock, Va.	
Winesap		Trace		
Black Twig		Trace		
Rome		None		
Winesap	50	1%	Mt. Jackson, Va.	
Stayman		0.5		
Stayman	100	1-3%	Turkey Knob, Va.	Associated frequently with blossom-end rot.
Winesap	50	Trace	Staunton, Va.	
Stayman		Trace		
Winesap	15	1%	Keswick, Va.	Orchard surrounded on two sides by Junipers.

Table 29 (Cont.)

VARIETY	ESTIMATED ACREAGE	AMOUNT ON FRUIT	LOCALITY	REMARKS
Stayman	100	None	Cloverdale, Va.	
Black Twig		None		
Winesap		None		
Delicious	5	None	Big Island, Va.	
Rome	300	None	Roanoke, Va.	Common apple rust found, but no quince rust (G. germinale)
York		None		
Winesap		None		

Orchards were examined from here as far south as Hollywood, Ga., with no more quince rust being observed.

SUMMARY: The fruit of the Winesap group of apples (Winesap, Stayman, Black Twig), and Delicious were not infected by apple rust, but were all infected by quince rust. The quince rust had a more restricted limit, being found in Maryland, West Virginia, and Virginia. Apparently there was more quince rust than apple rust on apple fruit in the apple growing regions visited during the season of 1932. A correlation was observed between the severity of apple rust and quince rust and the abundance of red cedars.

The fruit of two varieties, Yellow Transparent and Rome, were found to be infected with both rust species. The quince rust on Rome fruit was found only in orchards near Winchester, Virginia. This suggests the possibility of physiological strains of G. germinale.

OCCURRENCE OF WALNUT BLOTCH IN WASHINGTON REPORTED

Walnut blotch, a disease due to Marsonia juglandis (Lib.) Sacc., is causing considerable loss of nuts on seedling walnut trees this year in the vicinity of Ferndale, Washington. In one case it is estimated that approximately 75 per cent of the crop has been destroyed by this malady. The disease was found also on the leaves and stems of shoots of current growth. As far as the writer has been able to ascertain, this is the first definite report of the presence of Marsonia juglandis in the Pacific Northwest. (Paul W. Miller, Oct. 5).

BITTER ROT OF APPLE SEVERE IN OHIO

In spite of the extreme dry weather which we have experienced in most of Ohio, apple bitter rot (Glomerella cingulata) is severe in southern Ohio. It has been found as far north as Columbus. The spores of the bitter rot fungus were apparently disseminated during the week of July 4. We are

fortunate in that we have had practically no rain which has been of sufficient consequence to cause further dissemination since then. Most of our growers have been in the habit of applying a Bordeaux spray about the middle of July for the control of bitter rot. This spray was entirely too late this year. (A. L. Pierstorff, Sept. 12).

DISEASES OF VEGETABLE AND FIELD CROPS

PEANUT DISEASE SURVEY OF GEORGIA

Paul R. Miller

An intensive survey was made from April 21 to May 17, in Tift, Worth, Calhoun, Clay, Early, and Lee Counties, Georgia, for the purpose of obtaining further information on the seedling diseases of peanuts. The relation between the type of soil, rotation and cultural practices and organisms associated with diseased or dead plants, and the stands obtained were noted by making actual counts of plants in representative fields.

The stands were very poor, the average being from 50 to 70 per cent, with an occasional stand as low as 30 per cent. To what extent this condition was due to disease-borne or soil-borne organisms, to general vitality of the seed, or to the drouth cannot be determined. It was extremely dry during the early planting and growing season, there being less than one-eighth of an inch of rainfall during the time the survey was made.

Better stands were noted where the peanuts had been shelled before planting, than where they had been planted in the shell. In the latter case a tendency was observed for one pea to have germinated first and lifted the rest of the pod out of the soil, thus destroying its chance of germination.

As a result of several hundred isolations from diseased plants from the various fields observed, it is apparent that Fusarium martii var. minus Sherb. and Bacterium solanacearum E. F. S. were the principal organisms involved in the seedling diseases, although Sclerotium rolfsii Sacc., Pythium sp., and Rhizoctonia sp. were isolated frequently. The pathogenicity of F. martii minus and of B. solanacearum was proved by inoculations. These two organisms were much more prevalent on light sandy soils than on the clay soils, and also when peanuts had been planted following peanuts or cotton. The Spanish variety seemed to be more damaged by both organisms than Virginia Bunch or Virginia Runner. Only an occasional culture was obtained from Georgia Runner and Alabama Runner.

SURVEY OF DISEASES ON PEANUTS IN VIRGINIA, NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, FLORIDA, AND ALABAMA, AUGUST 3 - SEPTEMBER 5, 1932

Paul R. Miller

Leaf spot (Cercospora personata) occurred throughout the entire peanut growing region. It was just making its appearance in Virginia the first week of August. It was found in all fields visited, and caused defoliation ranging from 50 to 100 per cent on the Spanish, 30 to 50 per cent on the Virginia Bunch and 15 to 30 per cent on the Virginia Runner. There is apparently a close relationship existing between the moisture supply and the severity of leaf spot, as there was invariably more defoliation where there was a heavy growth of vines and foliage. Soil types apparently play no part in the severity of this disease, although the application of lime seems to delay its appearance.

A fifteen-acre field was found to be severely infected by Botrytis sp. at Holland, Virginia. These leaf spots were large and very irregular with light brown centers, as contrasted to the smaller, circular, dark centered Cercospora spot.

Sclerotium rolfsii Sacc. was less generally distributed than the leaf spot. A few dead plants were observed near Suffolk, Virginia, but there was less than one-half per cent loss due to this organism. Fields near Edenton, North Carolina, were showing from 5 to 15 per cent infection. Approximately 5 per cent of the plants had been killed in the experimental plots at Florence, South Carolina. The greatest losses were noted in Clay County, Georgia, where as high as 58 per cent of the plants were dying. Sclerotium rolfsii was observed to be developing in the stacks, where the peanuts had been harvested while they were not fully mature. Sclerotia could be found in all stages of development throughout the vines. The type of injury from Sclerotium appeared somewhat different from that of last year in that the tops were killed, and there was not as much loss due to the rotting off of the "pegs". This organism apparently seeks the moisture in the soil, and due to the rainy season late this fall it was nearer the surface.

DISEASES OF CANNING BEANS IN NEW YORK

A. L. Harrison, James G. Horsfall, and W. H. Burkholder

Between August 9 and 18, just as the vines were podding, the writers made an extensive survey of the canning bean districts of New York State, visiting 65 fields containing 550 acres in 13 counties as follows: Livingston, Wyoming, Erie, Cattaraugus, Chatauqua, Genesee, Ontario, Cayuga, Seneca, Cortland, Oneida, Jefferson, and Madison. Of the fields examined ten were planted to wax beans and 55 to Refugee Stringless Green Pod - the most popular canning variety.

Mosaic was prevalent in all localities, and usually of considerable consequence except on the wax varieties. More than 75 per cent of the fields of Refugee visited showed from 90 to 100 per cent infection. This finding agrees in the main with the frequency of mosaic observed in Refugee beans in 1929. (Plant Disease Reporter Supp. 76: 86. 1930). In some cases of 100 per cent infection, the disease did not seem to be affecting materially the growth and yield of the individual plant while in other cases it appeared as though the yield would be greatly reduced. The general observation was that fields exposed to extreme conditions of rain and wind did not show as many mosaic-infected plants as more sheltered fields. This was especially noticeable in one case in Cortland County and in one case in Livingston County. In the latter case a field situated on the crown of an exposed hill had less than 15 per cent of mosaic-infected plants while the plants in the more sheltered fields in the same locality and sown from the same seed were nearly all infected, largely as a result of top spread. Elevation in itself, at least in the bean-growing areas, did not seem to be a factor in limiting the spread of mosaic since some of the highest bean fields in the State were heavily infected when visited.

In Cortland County the diminished frequency of top spread was noteworthy, being much less than in any other County. In one of two fields it appeared that little or no top spread had occurred.

The bean aphid, Aphis rumicis, and the peach aphid, Myzus persicae, were found quite commonly in bean fields during the survey and in the vicinity of Geneva throughout the summer, although the former greatly outnumbered the latter. These aphids, however, did not appear to be numerous enough, as Nelson (Mich. Tech. Bul. 118: 14) has found, to account for the rapidity with which the disease was disseminated.

Anthracnose (Colletotrichum lindemuthianum) was of little importance to the canning bean industry this year. In only a few isolated localities was the disease of any importance. Although bacterial blight (Phytomonas phaseoli) was more common this year than halo blight (Phytomonas medioaginis phaseolicola) neither disease did any damage to the Refugee variety. There was some injury to the wax beans. Root rot was observed in many localities but was of little consequence.

Angular leaf spot, (Isariopsis griseola), was found in several fields on the Indian Reservation in Erie County where it was observed by Burkholder ten years ago, although he had not seen it since in the State.

Hydrosis of Bean Pods. In late August the writers' attention was drawn by Dr. Fred Geise to an unusual bean trouble in the Oneida-Madison area of New York State. This disease affected the pods of the popular canning variety, Refugee Stringless Green Pod, in such a way that they appeared dark in the can, thus materially reducing the quality.

In general, the affected pods were glassy in appearance and lacking to a large extent the pubescence of a healthy Refugee pod. In several cases the pods exhibited an uneven, pimply symptom somewhat resembling oedema. Sometimes whole sections of the pods, especially above the suture opposite the attachment of the seeds, displayed a dark green, water-soaked appearance, which, however, differed from the lesions of bacterial blight. In fact, cultures from these yielded no microorganisms. Closer observation of most of the pods revealed small, irregular, water-soaked lesions forming an indefinite network pattern of hydrotic tissue which on sectioning seemed to be associated with the vascular system of the pod.

The same condition, though much milder, was noticed on some caged plants at Geneva a few days later. In this instance the hydrotic pods were associated only with mosaic-infected plants, although not all of these produced affected pods. About half the mosaic-infected plants examined yielded diseased pods, but frequently only a few of the pods on a plant were affected.

OUTBREAK OF TOMATO LATE BLIGHT IN MASSACHUSETTS

O. C. Boyd has sent the following statement: "About two weeks ago late blight (Phytophthora infestans) appeared in scattered sections of the eastern half of the State on tomatoes. There was no more than a moderate amount of this disease on late potatoes this year, but about the time potato vines matured the weather became exceedingly favorable for its development. As a result, it attacked tomatoes both young and old, and in some instances it has completely destroyed not only the remainder of the early plantings, but the later ones as well. Such instances were called to my attention recently in Worcester County; and typical specimens of fruit rot were received from Bristol County with the statement that "Hundreds of bushels of our late tomato crop in this section have gone down with this trouble during the past two weeks.

"The disease is just now reaching the Connecticut Valley market gardners, but of course it will not cause so much damage here, for the crops will have produced two or three weeks longer before it, or the frost, kills them. The whole situation is unusual inasmuch as heretofore, late blight has only occasionally been observed in tomatoes in New England, and then it has caused only minor injury to either foliage or fruit. As it is at present, it is going through the vines faster than it does in a wet year on potatoes, rotting the fruits both ripe and green. The cool wet weather we have experienced, including clear nights with heavy dews, has greatly encouraged its spread." (Sept. 29).

MISCELLANEOUS REPORTS ON VEGETABLE DISEASES

POWDERY SCAB OF POTATOES IN NEW YORK: In the potato tuber defect survey made in Franklin County, New York, on September 21, visits were made to ten fields. Powdery scab (Spongospora subterranea) was found in

five fields in amounts ranging from 1 to 67 per cent of tubers affected. This trouble has not been found in the central and southern counties of the State. (F. M. Blodgett, Oct. 3).

TOMATO CLOUDY SPOT IN OHIO: In several canning districts in western Ohio, what appears to be tomato cloudy spot (cause undetermined) is present in epidemic form. This trouble is manifested by a white, cloudy appearance, visible through the epidermis of the tomato. When the fruit is peeled these whitish islands of white glistening cells adhere to the epidermis, or when they are removed with a knife, leave the tomato fruit pitted and unfit for first grade tomatoes. Specimens of these tomatoes have been sent to Dr. Weber in Florida and he thinks that it is the same trouble which he describes in Florida Bulletin No. 185. To our knowledge this is its first appearance in Ohio. If anyone has an explanation for this trouble and the remedy therefor, our growers would be grateful for it. (A. L. Pierstorff, Sept. 12).

DOWNY MILDEW OF ONION IN MASSACHUSETTS: In the Connecticut River Valley search had been made for downy mildew (Peronospora schleideni) but it was not observed until after August 1, following a two-day rain. By September 15, the disease could be found in 60 per cent of the fields. In one 3-acre field the grower claimed "one-half crop" due to the disease which was observed soon after July 4. (W. H. Davis, Sept. 15).

ASPARAGUS TIP WILT IN MASSACHUSETTS: During August and September, a wilt of young asparagus tips has been under observation. Cultures from implantings of disinfected tips on potato-dextrose agar showed the presence of an Alternaria. During the advent of autumn rains, the disease became more prevalent and the Alternaria sporulated on the stems. The disease is new to this section of Massachusetts. (W. H. Davis, Oct. 1).

CEREAL DISEASES

BACTERIAL WILT OF SWEET CORN (APLANOBACTER STEWARTII)

Maryland: I have observed only one case of the wilt this year. This occurred in test plots at College Park in a Golden Bantam hybrid strain, the seed of which was received from Connecticut. Approximately 50 per cent of the plants in this plot were killed by the disease. Dr. R. G. Rothgeb, of the Agronomy Department, who was present at the time the above inspection was made, reports that several other strains from Connecticut showed the same condition later in the season.

Practically all of the sweet corn grown for canning in Maryland is of three varieties: Stowell's Evergreen, Narrow Grain Evergreen, and Country Gentleman. We normally expect very little, if any, bacterial wilt in these varieties in the canning crop.

I have made no observations whatever of the market garden crop. (H. A. Hunter, October 6).

Indiana: Fields near Lafayette showed 10 to 15 per cent. Some gardens and small plantings were entirely killed. Earlier varieties of sweet corn were much more susceptible than late varieties. (G. M. Smith).

Approximately 10 per cent infection was observed in a field of Tom Thumb pop corn in northern Indiana. There seems to have been more wilt than has occurred for several years. (C. T. Gregory).

Michigan: The disease is widespread during the present season, occurring as far north as Oceana County on the west side and Alpena County on the eastern side. The disease, of course, is much worse in the southern half of the State, particularly in the southeastern section. (J. H. Muncie, October 6).

DISEASES OF TREES AND ORNAMENTALS

A NEW DISEASE ON FIR TREES IN THIS COUNTRY

Rehmiellopsis bohemica has been found by Alma M. Waterman and Malcolm A. McKenzie, of the Division of Forest Pathology, in a planting of about 500 Colorado firs (Abies concolor) in eastern Massachusetts. A similar disease has also been found on the same host in Maine and a specimen of it on an unidentified fir has been received from New York. So far as known, this is the first report of this disease in the United States and A. concolor is a new host. Specimens of firs suspected of harboring this disease are requested. (A. R. Gravatt).

NOTES ON DISEASES OF ORNAMENTALS

STEM ROT OF ZINNIA IN OREGON: F. P. McWhorter reports a case of Zinnias attacked by the stem decay produced by Sclerotinia sclerotiorum in the same way in which this parasite affects sunflowers. Two years ago sunflowers were planted on this place. Last year there was some loss in the Zinnias on the area; this year there was a great loss. The locality is Albany, Oregon. (H. P. Barss, Sept. 27).

BACTERIAL LEAF SPOT OF NASTURTIUM IN MAINE: On August 5, 1932, affected leaves were received. Some were finally sent to Miss Nellie A. Brown, following her note in the Plant Disease Reporter on Bacterium aptatum, and were diagnosed by her as apparently being the disease in question (Donald Folsom).

ASTER YELLOWS (VIRUS) IN MASSACHUSETTS: In the Connecticut Valley about 30 per cent of the plants inspected after the transplants were well established showed symptoms of yellows. During a dry period which followed, most of the highly infected plants died. This noticeably controlled further dissemination. (W. H. Davis, Sept. 15).

NOTES ON NEMIC DISEASES

Tylenchus dipsaci, the stem or bulb nematode, was found on garlic imported from Spain. This is the first time this parasite, as far as known, is recorded from Spain.

The same parasite was observed in ten different lots of Scilla (some sibirica, some sp.?) from Holland.

For the first time this nema was found in Chionodoxa bulbs, three different lots, also imported from Holland.

Nerine bulbs are another new host for this parasite. One lot of these bulbs was found to be affected with Tylenchus dipsaci; another lot with Aphelenchoides fragariae. The first lot was from North Carolina, the second from South Carolina.

(G. Steiner and Edna Buhrer).

SPECIAL NOTICE

COLORED POSTERS OF DISEASES OF POTATOES, TOMATOES, PEPPERS, EGGPLANTS, AND CORN

A series of 26 colored plant disease posters, including certain diseases of the above mentioned crops, printed on pasteboard, 7 1/4 x 12 inches in size, with tissue paper facings, reprinted from colored plates in U. S. D. A. Miscellaneous Publications Nos. 98 and 121, and from U. S. D. A. Technical Bulletin No. 260, has recently been issued.

These are available only by purchase at the Office of the Superintendent of Documents, Government Printing Office, Washington, D. C. Interested pathologists may communicate, however, with Dr. R. J. Haskell, Senior Plant Pathologist, Extension Service, United States Department of Agriculture, Washington, D. C., who has been much interested in the preparation of these posters and will be glad to send further information regarding their contents.